

(19)

Generated Document.

(11) Publication number: **59078919 A****PATENT ABSTRACTS OF JAPAN**(21) Application number: **57186866**(51) Intl. Cl.: **C01B 33/02**(22) Application date: **26.10.82**

(30) Priority:

(43) Date of application  
publication: **08.05.84**(84) Designated contracting  
states:(71) Applicant: **MITSUMI TOATSU CHEM INC**(72) Inventor: **KITAGAWA YORIHISA  
HIROSE ZENKO  
ISOTANI KAZUYOSHI  
ASHIDA YOSHINORI**

(74) Representative:

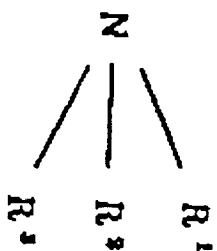
**(54) FORMATION OF  
AMORPHOUS SILICON  
FILM**

(57) Abstract:

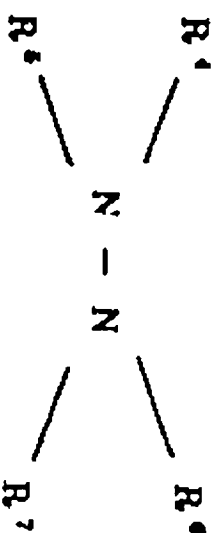
**PURPOSE:** To increase the growing speed of an amorphous silicon (a-Si) film without deteriorating the characteristics of the film in the manufacture of an a-Si film by a chemical vapor deposition (CVD) method by adding a specified amount of ammonia (deriv.) to a gaseous starting material.

CONSTITUTION: Ammonia (deriv.) represented by formula I and/or hydrazine (deriv.) represented by formula II is used. In the formulae each of R1WR7 is H, alkyl or aryl. A substrate is placed in a decomposition furnace, silane of higher order represented by formula III (where n is 2) such as disilane or trisilane is introduced into the furnace optionally together with an inert gas such as nitrogen, and the silane is thermally decomposed at about 250W600°C to deposit an a-Si film on the substrate. At this time, said ammonia (deriv.) and/or hydrazine (deriv.) is added to the silane by an amount satisfying relation represented by formula IV [where N is the amount of nitrogen in the ammonia (deriv.) and/or hydrazine (deriv.), and Si is the amount of silicon in the gaseous silane].

COPYRIGHT: (C)1984, JPO&Japio



I



II

$\sin H_{2n+2}$

III

IV

$0.01 \leq N / S_i ( \text{ダラム-アトム比} ) < 0.2$

